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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/687,506	10/16/2003	Louise C. Sengupta	JSF001-0068D1/WJT08-044D1	9036

7590 10/18/2006

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EXAMINER

LOPEZ, CARLOS N

ART UNIT PAPER NUMBER

1731

DATE MAILED: 10/18/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/687,506	Applicant(s) SENGUPTA ET AL.	
	Examiner Carlos Lopez	Art Unit 1731	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 August 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-25 is/are pending in the application.
- 4a) Of the above claim(s) 12-23 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-11, 24 and 25 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>1 IDS</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

Applicant's election of 1-10, 24-25 and "barium strontium titanate" in claim 11 in the reply filed on 8/29/06 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-11, and 24-25 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The phrase "sintering the material", makes it unclear to which material is being sintered since the claim recites dielectric material and metal oxide materials. Similarly, the phrase "the material", in claims 4-6, makes it unclear to which material is being sintered since the claim recites dielectric material and metal oxide materials.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States

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only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1, 4-11, and 24-25 are rejected under 35 U.S.C. 102(e) as being anticipated by Zhu et al (US 6,404,614). Zhu discloses a method of making electronically tunable dielectric material. The method comprises of providing a layer comprised of tunable dielectric material such as BSTO with two metal oxides such as Mg_2SiO_4 and MgO as tunable film of a varactor (See Col. 4, lines 25ff to Col.6, lines 5ff). As further noted in Col. 5, lines 22ff, the metal oxides form about 1 to 80% weight of the particles. As for the claimed sintering the mixed particles, it is deemed as being an inherent step done by Zhu in order to ascertain that the tunable materials provide improved sintering characteristics as noted in Col. 6, lines 4ff.

As for claims 4-6, see Col. 5, lines 20ff disclosing the claimed weight percentages.

As for claim 7, Zhu does not disclose the addition of more than two metal oxides.

As for claims 8-10, Col. 5, lines 30ff discloses the claimed weight ratios.

As for claim 11, see above noting BSTO, barium strontium titanate.

As for claims 24-25, Col. 5, lines 54ff notes the claimed tenability.

The applied reference has a common inventor with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in

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the reference was derived from the inventor of this application and is thus not the invention "by another," or by an appropriate showing under 37 CFR 1.131.

Claims 1-7, 11 and 24-25 are rejected under 35 U.S.C. 102(e) as being anticipated by Sengupta (US 6,737,179). Sengupta discloses a method of making electronically tunable dielectric material. The method comprises of providing a film comprised of tunable dielectric material such as BSTO with two metal oxides such as Mg_2SiO_4 and MgO (See Col. 5, lines 21ff). As further noted in bridging paragraph of col. 5-6, the metal oxides form about .25 to 80% weight of the particles. As for the claimed sintering see Col. 6, lines 60ff disclosing sintering of the materials.

As for claims 2-3, Col. 5, lines 50ff discloses the claimed particles sizes.

As for claims 4-6, as noted above the claimed weight percentages are encompassed by Sengupta.

As for claim 7, Sengupta notes in the abstract that other metals "may" be added thus showing that the dielectric material may consist of essentially two metal oxides.

As for claim 11, see above noting BSTO, barium strontium titanate.

As for claims 24-25, in view that Sengupta's material has a tenability of from about 5 to 50% at 10 V/micron it would be inherent that it would also have the claimed tunability of at least 25% or 30% at 8V/micron.

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The applied reference has a common inventor with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not the invention "by another," or by an appropriate showing under 37 CFR 1.131.

Claims 1-7, 11 and 24-25 are rejected under 35 U.S.C. 102(e) as being anticipated by Chiu et al (US 6,154,895). Chiu discloses a method of making electronically tunable dielectric material. The method comprises of providing tunable ceramic material comprised of tunable dielectric material such as BSTO with at least one metal oxide such as Mg_2SiO_4 and MgO (See Col. 4, lines 15ff). It is noted that the phrase "at least one metal oxide" encompasses two metal oxides as claimed by applicant. In regards to the claimed weight percentage of the metal oxides, col. 4, lines 45ff disclose the metal oxides form about 1 to 80% weight of the particles. As for the claimed sintering see Col. 5, lines 40ff disclosing calcining the materials at about 800°C to 1200°C, which is deemed as the claimed sintering of the materials.

As for claims 2-3, Col. 5, lines 39-41f discloses the claimed particles sizes.

As for claims 4-6, as noted above the claimed weight percentages are encompassed by Chiu.

As for claim 7, Chiu notes in Col. 4, lines 55ff that other metals "may" be added thus showing that the dielectric material may consist of essentially two metal oxides.

As for claim 11, see above noting BSTO, barium strontium titanate.

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As for claims 24-25, see col. 5 lines 9-1 showing tunability from about 20% to 75% at 8V/micron.

The applied reference has a common inventor with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not the invention "by another," or by an appropriate showing under 37 CFR 1.131.

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 1 and 4-7 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 17 of U.S. Patent No. 7,056,468

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('468). Although the conflicting claims are not identical, they are not patentably distinct from each other because claim 17 of '468 teaches of sintering a mixture comprised of at least one electronic tunable ceramic material and at least one metal oxide selected from the group, among other things, Mg_2SiO_4 and MgO wherein the metal oxide comprise from 1 to 80% by weight of the particles. It would be obvious to a person of ordinary skill in the art at the time the invention was made to have use an additional metal oxide as claimed, in view that claim 17 clearly suggest or envisage of using two metal oxides, meaning more than one metal oxide can be used, as suggested by the phrase of claim 17 of "at least one metal oxide."

As for claims 4-6, claim 17 clearly notes that the metal oxides comprise from about 1 to 80% by weight of the layer that comprises the claimed mixture.

As for claim 7, in teaching that the mixture is comprised of at least one metal oxide, it is obvious to a person of ordinary skill in the art that the mixture of '468 can consist essential of just two metal oxides

Claim 11 is rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 17 of U.S. Patent No. 7,056,468 ('468) in view of Sengupta (US 5,427,988). Although the conflicting claims are not identical, they are not patentably distinct from each other because claim 17 of '468 teachings of sintering a mixture comprised of at least one electronic tunable ceramic material and at least one metal oxide selected from the group, among other things, Mg_2SiO_4 and MgO wherein the metal oxide comprise from 1 to 80% by weight of the particles. It would be obvious to a person of ordinary skill in the art at the time the invention was made to

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have use an additional metal oxide as claimed, in view that claim 17 clearly suggest or envisage of using two metal oxides, meaning more than one metal oxide can be used, as suggested by the phrase of claim 17 noting "at least one metal oxide." Claim 17 is silent defining the tunable dielectric material as being BSTO. However, Sengupta notes that BSTO is a dielectric ceramic material, see abstract. Hence, it would be obvious to a person of ordinary skill in the art to have used known tunable dielectric material such as BSTO disclosed by Sengupta in the making of a tunable ceramic composite of '468.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Carlos Lopez whose telephone number is 571.272.1193. The examiner can normally be reached on Mon.-Fri. 8am - 5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steven Griffin can be reached on 571.272.1189. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

A handwritten signature in black ink, consisting of a stylized 'L' followed by a 'Z'.

CL